

APPENDIX A

DATA FORMATTING EXAMPLES

1. Long data format, used in separate MLM analyses; the file name is *separatelong*.

id = family or dyad indicator
mage = infant age in months at each mother–child lab visit
fage = infant age in months at each father–child lab visit
mms = mother outcome (marital satisfaction score)
fms = father outcome (marital satisfaction score)

<i>id</i>	<i>mage</i>	<i>fage</i>	<i>mms</i>	<i>fms</i>
2	3	3	86.745	90.000
2	5	5	96.000	104.000
2	7	7	104.000	123.317
2	12	14	107.000	117.000
2	20	20	119.000	125.000
3	3	3	130.000	140.000
3	5	5	139.000	119.463
3	7	7	117.000	145.000
3	12	14	135.000	134.000
3	20	20	130.000	127.000

2. Long data format, used in simultaneous MLM analyses; the file name is *bothlong*

id = family or dyad indicator
age = infant age in months at each mother–child or father–child lab visit
wave = measurement occasion (1–5)
role = parent role (1 = mother, 0 = father)
mom = dummy coded for mother versus father report (1 = mother, 0 = father)
ms = outcome (marital satisfaction score)

<i>id</i>	<i>age</i>	<i>wave</i>	<i>role</i>	<i>mom</i>	<i>ms</i>
2	3	1	1	1	86.745
2	5	2	1	1	96.000
2	7	3	1	1	104.000
2	12	4	1	1	107.000
2	20	5	1	1	119.000
2	3	1	0	0	90.000
2	5	2	0	0	104.000
2	7	3	0	0	123.317
2	14	4	0	0	117.000
2	20	5	0	0	125.000
3	3	1	1	1	130.000
3	5	2	1	1	139.000
3	7	3	1	1	117.000
3	12	4	1	1	135.000
3	20	5	1	1	130.000
3	3	1	0	0	140.000
3	5	2	0	0	119.463
3	7	3	0	0	145.000
3	14	4	0	0	134.000
3	20	5	0	0	127.000

3. Wide data format, used in all SEM analyses

id = family/dyad identifier
MMS = mother report of marital satisfaction
FMS = father report of marital satisfaction

<i>id</i>	<i>MMS1</i>	<i>MMS2</i>	<i>MMS3</i>	<i>MMS4</i>	<i>MMS5</i>	<i>FMS1</i>	<i>FMS2</i>	<i>FMS3</i>	<i>FMS4</i>	<i>FMS5</i>
2	86.75	96.00	104.00	107.00	119.00	90.00	104.00	123.32	117.00	125.00
3	130.00	139.00	117.00	135.00	130.00	140.00	119.46	145.00	134.00	127.00

APPENDIX B

SAS AND MPLUS SYNTAX

A. SAS Code

Center AND SCALE THE AGE VARIABLE

*for 'separatelong'

cmage = mage/12;

cfage = fage/12;

*for 'bothlong'

cage = age/12;

ICC CALCULATIONS (=intercept variance/[intercept variance + level-1 residual variance])

(1) ICC for mothers' data over time;

proc mixed covtest data = separatelong method = reml;

class id;

model mms = /s covb;

random int /type = un subject = id;

run;

(2) ICC for fathers' data over time;

proc mixed covtest data = separatelong method = reml;

class id;

model fms = /s covb;

random int /type = un subject = id;

run;

(3) ICC for measuring the nonindependence between mothers and fathers at wave $t = 1, 2, \dots$ or T ;

proc mixed covtest data = bothlong method = reml;

where wave = 1; * need to change 1 to t for wave t ;

class id;

model ms = /s covb;

random int /type = un subject = id;

run;

SEPARATE ANALYSES (MOTHER)

proc mixed covtest data = separatelong method = ml;

class id;

model mms = cmage /s covb;

random int cmage /type = un subject = id;

run;

SEPARATE ANALYSES (FATHER)

proc mixed covtest data = separatelong method = ml;

class id;

model fms = cfage /s covb;

random int cfage /type = un subject = id;

run;

Center AND SCALE THE AGE VARIABLE

cage = age/12;

SIMULTANEOUS "DEFAULT" METHOD

proc mixed covtest data = bothlong method = ml;

class id;

model ms = cage mom mom *cage /s covb;

random int cage mom mom *cage /type = un subject = id;

run;

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SIMULTANEOUS “DEPENDENT” METHOD

```

proc mixed covtest data = bothlong method = ml;
class id role wave;
model ms = cage mom mom*cage /s covb;
random int cage mom mom*cage /type = un subject = id;
repeated role/type = CSH subject = id*wave; * the role and wave variables are used for specifying the “dependent” error covariance structure;
run;

```

B. SEM Mplus Code

For our example, we have $MT1 = 3/12$, $MT2 = 5/12$, $MT3 = 7/12$, $MT4 = 12/12$, and $MT5 = 20/12$ for mothers. For fathers, we have $FT1 = 3/12$, $FT2 = 5/12$, $FT3 = 7/12$, $FT4 = 14/12$, and $FT5 = 20/12$

SEPARATE ANALYSES (MOTHER)

```

level slope |MMS1@MT1 MMS2@MT2 MMS3@MT3 MMS4@MT4 MMS5@MT5;
!means set to zero
[MMS1@0]; [MMS2@0]; [MMS3@0]; [MMS4@0]; [MMS5@0];
!residual variances constrained to be equal
MMS1 MMS2 MMS3 MMS4 MMS5 (1);
!estimate means and variances of intercept and slope
[level slope]; level slope;

```

SEPARATE ANALYSES (FATHER)

```

level slope |FMS1@FT1 FMS2@FT2 FMS3@FT3 FMS4@FT4 FMS5@FT5;
!means set to zero
[FMS1@0]; [FMS2@0]; [FMS3@0]; [FMS4@0]; [FMS5@0];
!residual variances constrained to be equal
FMS1 FMS2 FMS3 FMS4 FMS5 (1);
!estimate means and variances of intercept and slope
[level slope]; level slope;

```

SIMULTANEOUS “DEFAULT” METHOD

```

M_level M_slope |MMS1@MT1 MMS 2@MT2 MMS 3@MT3 MMS4@MT4 MMS5@MT5;
F_level F_slope |FMS1@FT1 FMS2@FT2 FMS3@FT3 FMS4@FT4 FMS5@FT5;
!means set to zero
[MMS1@0]; [MMS2@0]; [MMS3@0]; [MMS4@0]; [MMS4@0];
[FMS1@0]; [FMS2@0]; [FMS3@0]; [FMS4@0]; [FMS5@0];
!residual variances constrained to be equal
MMS1 MMS2 MMS3 MMS4 MMS5 (1);
FMS1 FMS2 FMS3 FMS4 FMS5 (1);
!create difference score between M_level and F_level, M_slope and F_slope
!to mimic the MLM specification
Diff_level by M_level@1;
M_level on F_level@1;
Diff_slope by M_slope@1;
M_slope on F_slope@1;
!set means and variances of m_level and m_slope to zero
[M_level@0 M_slope@0]; M_level@0 M_slope@0;
!estimate means of Father intercept and slope
[F_level F_slope];
!estimate means of the difference variables
[Diff_level Diff_slope];
!estimate variances
F_level; F_slope; Diff_level; Diff_slope;

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(Continued)

SIMULTANEOUS "DEPENDENT" METHOD

```

M_level M_slope [MMS1@MT1 MMS 2@MT2 MMS 3@MT3 MMS4@MT4 MMS5@MT5;
F_level F_slope [FMS1@FT1 FMS2@FT2 FMS3@FT3 FMS4@FT4 FMS5@FT5;
!means set to zero
[MMS1@0]; [MMS2@0]; [MMS3@0]; [MMS4@0]; [MMS5@0];
[FMS1@0]; [FMS2@0]; [FMS3@0]; [FMS4@0]; [FMS5@0];
!residual variances constrained to be equal
MMS1 MMS2 MMS3 MMS4 MMS5 (1);
FMS1 FMS2 FMS3 FMS4 FMS5 (2);
!at a given time, residuals are allowed to correlate between dyad members
!but constrained to be equal across time points
MMS1 with FMS1 (3);
MMS2 with FMS2 (3);
MMS3 with FMS3 (3);
MMS4 with FMS4 (3);
MMS5 with FMS5 (3);
!create difference score between M_level and F_level, M_slope and F_slope
!to mimic the MLM specification
Diff_level by M_level@1;
M_level on F_level@1;
Diff_slope by M_slope@1;
M_slope on F_slope@1;
!set means and variances of m_level and m_slope to zero
[M_level@0 M_slope@0]; M_level@0 M_slope@0;
!estimate means of Father intercept and slope
[F_level F_slope];
!estimate means of the difference variables
[Diff_level Diff_slope];
!estimate variances
F_level; F_slope; Diff_level; Diff_slope;

```
